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From: Sorrenson - DNR, Allen
Sent: Wed 7/22/2015 2:23:56 PM
Subject: Contact Grout Recommendation
[USGrout-Brochure.pdf](#)

Matt, DRMS has reviewed the MES proposal to use Type V ultrafine grout as replacement for the specified Type V neat cement grout for contact grouting of the Red and Bonita adit bulkhead. DRMS recommends that this substitution be accepted with the relatively modest cost increase entailed, which has not yet been fully quantified by MES. The ultrafine grout will be mixed at a maximum 0.8:1 water/grout ratio. The basis for the recommendation is three-fold:

1. Neat cement grout has been used successfully for contact grouting of numerous adit bulkheads, but DRMS experience is that it must be mixed wet of optimal to allow effective pumpability, with the high water content reducing cured grout compressive strength. The ultrafine grout can potentially be mixed at a lower water/grout ratio.
2. Wet mixed neat cement may bleed. The ultra fine grout includes additives for bleed resistance.
3. The fine grind has the potential better to seal off fractures in the adit roof, walls and floor.

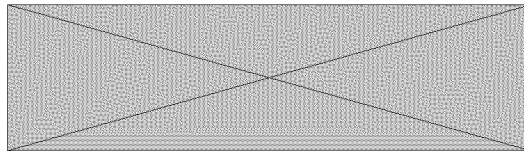
Attached again is information on the grout, thanks, Allen

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